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REMARKS**Objections to Specification**

The office objected to specification because of misspelled word "may" on page 17, line 12. The applicant submits request for amendment of the specification to correct the error.

The office objected to the specification because element 642 referred to on page 26, line 32 is not present in figure 7.

The applicant respectfully point out that figure 7 describes an alternative implementation for element 660, which is a part of element 642, both of which are shown in figure 6 and described in conjunction with the description of figure 6 and related receiver operation. Therefore, the applicant respectfully submits that no correction is necessary in this regard.

Rejection of claims

Claims 1-24 were presented for examination and were rejected.

The applicant traverses the rejection and respectfully requests reconsideration in the light of the amendments and the following remarks.

Claim Rejection – 35 USC 102 (e)

Claims 1, 4, 7 and 10 were rejected under 35 USC 102(c) as being anticipated by Antunes (Patent US 5,414,731).

The applicant respectfully traverses the rejection. The applicant respectfully submits that the claims claim fundamentally different invention that is not anticipated by Antunes.

Claim 1 after amendment recites:

1. (currently amended) A network comprising:
at least three nodes, and
each node comprising a transmitter for transmitting, to other nodes, timing for a plurality of transmission opportunities of said node and for transmitting at at least one of said transmission opportunities to initiate data transmission to another node, and
each of at least two of said nodes comprising logic for holding data indicative of an expected time and an expected frequency of at least one future transmission opportunity of each of a plurality of nodes, and
each of said at least two of said nodes comprising a receiver for receiving transmissions at transmission opportunities of at least one of said plurality of nodes.
(emphasis added)

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The Office states:

Regarding claims 1, 4, 7 and 10, Antunes discloses the limitations of a network, a node, methods of operating the network and node for synchronization of frequency hopping control clocks in wireless local area network, comprising radios (at least 3 nodes, claim 1) each having a transmitter, a receiver, and a hop table (claims 1, 4, 7, and 10). The hop table holds carrier frequency 21 (expect frequency, claims 1, 4, 7, and 10) and associated time duration 22 (expected time, claims 1, 4, 7, and 10) data for transmitting and receiving future transmission opportunities. See figure 1 and 3, col. 4, lines 8-9 and col 5, lines 28-31.

The referenced text reads:

col. 4, lines 8-9 recites:

"The radio 5 includes two elements; a radio controller 10 and a radio transmitter and receiver 11."

col 5, lines 28-31 recites:

"This data structure has two components: a hop table 20 and its length 22. Also shown is a hop table entry 21 consisting of a specification of a radio carrier frequency and its associated duration."

(emphasis added)

The applicant respectfully submits that neither the quoted text nor any other parts of Antunes specification teaches or suggests what the present invention teaches and what claim 1 claims.

In particular, Antunes does not teach or suggest in any way a network with *"each node comprising a transmitter for transmitting, to other nodes, timing for a plurality of transmission opportunities of said node and for transmitting at at least one of said transmission opportunities to initiate data transmission to another node."* as claimed by claim 1.

Claim 1 with the emphasized element of the claim reflects the ability of the network nodes, according to the present invention, to operate without timing for transmission furnished to all the nodes, for example, by a master node (and all the nodes synchronizing with that timing).

Nowhere in the Antunes specification such element or operation or ability is described or suggested in any way. Quite to the contrary. Antunes teaches an invention that requires all the nodes to synchronize with a master node.

Antunes clearly teaches master and slave operation.

For example, col. 7, lines 58-66 reads:

FIG. 7 is a schematic block diagram illustrating the relationship between a master station 120 and a slave station 130, where the frequency-hopping behavior of all slave stations

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wishing to communicate with the master station is coordinated by the master station. In particular, the hop clocks 110 of all the master station, and the active hop table (...) of all slave stations must be identical to that of the master station (...).

(emphasis added); (...) denotes text removed for clarity

Thus, it should be perfectly clear that that Antunes invention is fundamentally different and that Antunes invention does not describe or suggest what the present invention teaches and what claim 1 claims.

Consequently, the applicant respectfully submits that the Office rejection under 35 USC 102(c) in view of Antunes is traversed. The applicant respectfully submits that claim 1 is allowable.

Claim 4 recites:

4. (original) A method of operating a network comprising:

transmitting, from each node, timing for a plurality of transmission opportunities of said node, and transmitting at at least one of said transmission opportunities to initiate data transmission to another node, and

holding, each of at least two of said nodes, data indicative of an expected time and an expected frequency of at least one future transmission opportunity of each of a plurality of nodes, and

receiving, at each of said at least two of said nodes, transmissions at transmission opportunities of at least one of said plurality of nodes.

(emphasis added)

The applicant respectfully submits that, in the light of the arguments given in respect to claim 1, the Office rejection based on 35 U.S.C. 102(c) is traversed and that claim 4 is allowable.

Claim 7 recites:

7. (original) A network node comprising:

a transmitter for transmitting, to other nodes, timing for a plurality of transmission opportunities of said node and for transmitting at at least one of said transmission opportunities to initiate data transmission to another node, and

logic for holding data indicative of an expected time and an expected frequency of at least one future transmission opportunity of each of a plurality of nodes, and

a receiver for receiving transmissions at transmission opportunities of at least one of said plurality of nodes.

(emphasis added)

The applicant respectfully submits that, in the light of the arguments given in respect to claim 1, the Office rejection based on 35 U.S.C. 102(c) is traversed and that claim 7 is allowable.

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Claim 10 recites:

10. (original) A method of operating a network node comprising:
transmitting, to other nodes, timing for a plurality of transmission opportunities of said node, and transmitting at at least one of said transmission opportunities to initiate data transmission to another node, and
holding data indicative of an expected time and an expected frequency of at least one future transmission opportunity of each of a plurality of nodes, and
receiving transmissions at transmission opportunities of at least one of said plurality of nodes.
(emphasis added)

The applicant respectfully submits that, in the light of the arguments given in respect to claim 1, the Office rejection based on 35 U.S.C. 102(e) is traversed and that claim 10 is allowable.

In conclusion, the applicant respectfully submits that in the light of the given arguments, the Office rejection based on 35 U.S.C. 102(e) is traversed and that claims, 1, 4, 7 and 10 are allowable.

Claim Rejection – 35 USC 103 (a)

Claims 2-3, 5-6, 8-9, and 11-12 were rejected under 35 USC 103(a) as being unpatentable over Antunes in view of Flammer (US 5,079,768).

Claims 2-3, 5-6, 8-9 and 11-12 are dependent claims of claims 1, 4, 7, and 10 respectively.

The applicant respectfully submits that in view of the arguments given in the previous section, the independent claims 1, 4, 7, and 10 are allowable. Therefore, all dependent claims are also allowable.

The applicant respectfully submits that the Office rejection of claims 2-3, 5-6, 8-9 and 11-12 under 35 USC 103(a) as being unpatentable over Antunes in view of Flammer is traversed and that the claims are allowable.

Claims 13, 17, 19 and 23 were rejected under 35 USC 103(a) as being unpatentable over Antunes in view of Flammer.

Claim 13 recites:

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13. (original) A network comprising:

at least three nodes, and

each node comprising a transmitter for transmitting data according to timing for transmissions, wherein said node is capable of producing said timing for transmissions in the absence of any information of other nodes timing, and

each of at least two of said nodes comprising a receiver for receiving transmissions from each of a plurality of said nodes, and said receiver comprising a tracking mechanism for tracking contemporaneously timing for transmissions of each of a plurality of said nodes.

(emphasis added)

The claim with emphasized text reflects ability of a network according to the present invention to transmit data by a node in such a way that the timing for transmission does not depend on the timing of a receiving node (or nodes). For example, this allows a node in a network to be a transmit-only node, which is not equipped with a receiver. This way, the network can have nodes that can both transmit and receive as well as nodes that can only transmit information, such as some telemetry, burglary alarms, etc., as described in the specification.

The Office states:

"Regarding claims 13, 17, 19 and 23, Antunes discloses the limitations of a network, a node, and methods of operating the network and the node for synchronization of frequency hopping control clocks in a wireless local area network, comprising radios (at least 3 nodes; claim 13) each having a transmitter and a receiver (claims 13, 17, 19, and 23) for transmitting and receiving future transmission opportunities. See figure 1, and col. 4, lines 8-9.

However, Antunes does not disclose the limitations that the transmitter is capable of producing timing in the absence (claims 13 and 19) and independently (claims 17 and 23) of any information of other nodes timing, and the receiver has tracking mechanism for tracking timing for transmission (claims 13, 17, 19, and 23). But Flammer discloses using a temperature controlled stable oscillator TCXO 18 to provide transmitter timing in the absence and independently of any information from other nodes timing (see fig. 1, and col 4, lines 32-34) and using a phase lock loop 20 and mixer 28 in the receiver to track the timing (see fig. 1 and col.4 lines 37-40).

Therefore, it would have been obvious to those having ordinary skill in the art, at the time of invention, to incorporate in each node a transmitter and a receiver so that the transmitter can transmit timing independently of others and the receiver can track the incoming timing for transmission for a key motivation. By having each node contains transceiver hardware that is capable of transmit and track timing, a practical peer-to-peer network where there is no global timing, can be setup without the disadvantage of master and slave configuration as thought by Flammer. See col. 2, line 7-12."

The referenced text reads:

col. 4, lines 8-9 recites:

"... for identifying a frequency channel at which to transmit a data packet in a network according to an ..."

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col 4, lines 32-34 recites:

"The transceiver 12 comprises a high stability local frequency reference such as a temperature controlled stable oscillator (TCXO) 18 coupled to a first..."

col 4, lines 37-40 recites:

"The PLL 20 steers a first voltage controlled oscillator 26, which in turn provides a local reference to a mixer 28 and frequency feedback for error correction via line 30 to the first PLL 20."

col 2, lines 7-12 recites:

"The startup message indicates to each slave station a frequency-hopping sequence. Therein, all transmissions must be synchronized to the control unit at all times to preclude interference among slaves. Such a system is impractical in a peer to peer network where there is no global master or master timing."

(emphasis added)

The applicant respectfully submits that neither the quoted text nor any other part of Flamer's specification teach or suggest what the present invention teaches and what claim 13 claims.

In particular, Flamer does not teach or suggest in any way a network with *each node comprising a transmitter for transmitting data according to timing for transmissions, wherein said node is capable of producing said timing for transmissions in the absence of any information of other nodes timing.*

The applicant respectfully submits that the Office conclusion that Flammer's transmitter produces timing for transmission "*in the absence and independently of any information from other nodes timing*" is incorrect. The Office refers to the fact that Flammer describes a transmitter that has a stable oscillator - TCXO. The applicant respectfully submits that mere existence of TXCO in the Flammer's invention is not sufficient to make such a conclusion.

In fact, Flamer clearly teaches dependency of the transmitting node timing on the timing of the receiving (target) node. For example: col. 3 line 7-16 and col. 3, line 38-41 read:

A transmitter acquires synchronization with a target node by use of information previously received from or about a target indicating timing of present idle frequency hop of the target receiver. Each receiving node establishes in each station or node a table of receiver frequency hopping sequence offset (hop timing offsets) of each node within its communication range, and each node announces by transmission of a packet on each frequency in a packet its presence on each frequency in a packet which includes a hop timing offset indicator. [col. 3, line 7-16]

....

It is the responsibility of the transmitting node to follow the pre-established frequency-hopping pattern for an immediate target receiver based on information the node has previously acquired. [col. 3, line 38-41]

(emphasis added); [comment added]

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Thus, Flammer invention requires that a transmitter, in order to transmit to a node, first has to acquire the timing of that node.

Consequently, it should be crystal clear that Flammer invention is fundamentally different and that Flammer invention does not describe or suggest what the present invention teaches and what claim 13 claims.

Furthermore, the Office already admitted that: "Antunes does not disclose the limitations that the transmitter is capable of producing timing in the absence (claims 13 and 19) and independently (claims 17 and 23) of any information of other nodes timing".

The applicant respectfully submits that neither Flammer nor Antunes alone or in combination teach or suggest in any way what the present invention teaches and what claim 13 claims.

The applicant respectfully submits that in no way it can be reasonably asserted that based on two inventions (such as Antunes and Flammer), both of which teach dependent operations, one can readily conceive a system for an independent operation.

Such a radically different operation requires a radically different approach and an inventive leap. This is what the present invention teaches and this is what claim 13 claims.

In the light of the above arguments, the applicant respectfully submits that the Office rejection based on 35 U.S.C. 103(a) is traversed and that claim 13 is allowable.

Claim 17 recites:

17. (original) A method of operating a network comprising:
producing, at each node, timing for transmissions that is independent of other nodes' timings for transmissions, and transmitting data according to said timing, and
tracking, at said each node, contemporaneously timing for transmission of a plurality of nodes, and
receiving transmissions, at said each node, from at least one of said plurality of nodes in accordance with said tracking.
(emphasts added)

The applicant respectfully submits that, in the light of the arguments given in respect to claim 13, the Office rejection based on 35 U.S.C. 103(a) is traversed and that claim 17 is allowable.

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Claim 19 recites:

19. (original) A network node comprising:
a transmitter for transmitting data according to timing for transmissions, wherein said node is capable of producing said timing for transmissions in the absence of any information of other nodes' timing, and
a receiver for receiving transmissions from each of a plurality of nodes, and said receiver comprising a tracking mechanism for tracking contemporaneously timing for transmissions of each of a plurality of nodes.
(emphasis added)

The applicant respectfully submits that, in the light of the arguments given in respect to claim 13, the Office rejection based on 35 U.S.C. 103(a) is traversed and that claim 19 is allowable.

Claim 23 after amendment recites:

23. (currently amended) A method of operating a network node comprising
producing timing for transmissions that is independent of other nodes' timings for transmissions, and transmitting data according to said timing, and
producing timing for transmissions that is independent of other nodes' timings for transmissions, and transmitting data according to said timing, and
receiving transmissions from at least one of said plurality of nodes in accordance with said tracking.
(emphasis added)

The applicant respectfully submits that, in the light of the arguments given in respect to claim 13, the Office rejection based on 35 U.S.C. 103(a) is traversed and that claim 23 is allowable.

In conclusion, the applicant respectfully submits that in the light of the given arguments, the Office rejection based on 35 U.S.C. 102(e) is traversed and that claims 13, 17, 19, and 23 are allowable.

Claims 14, 16, 18, 20, and 24 were rejected under 35 USC 103(a) as being unpatentable over Antunes in view of Flammer. Claims 3, 6, 9, 12, 15, and 21 were rejected under 35 USC 103(a) as being unpatentable over Antunes in view of Flammer and further in view of Hong (US 6,466,608).

Claims 14-16, 18, 20-22, and 24 are dependent claims of claims 13, 17, 19, and 23 respectively.

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The applicant respectfully submits that in view of the arguments given thus far, the independent claims 13, 17, 19, and 23 are allowable. Therefore, all dependent claims 14-16, 18, 20-22, and 24 are also allowable.

The applicant respectfully submits that, in the light of the amendments and the arguments, the Office rejection of claims 14-16, 18, 20-22, and 24 based on 35 U.S.C. 103(a) is traversed and that claims are allowable.

Request for Reconsideration Pursuant to 37 C.F.R. 1.111

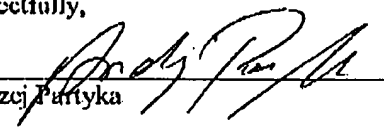
Having responded to each and every ground for objection and rejection in the Office action mailed April 16, 2004, applicant requests reconsideration of the application pursuant to 37 CFR 1.111 and request that the Examiner allow the pending claims 1-24 and pass the application to issue.

Applicant respectfully submits that the already allowed claims 1-24 are allowable and requests that the Examiner pass the application to issue.

Additional remarks

The applicant wishes to inform the Office about recent references cited by the Office in conjunction with examinations of other Applicant's inventions from similar subject field, and about other recently issued patents of the applicant: US 5,309,448 - Bouloutas, US 5,595,342 - McNair, US 5,748,103 - Flach, US 6,700,920 - Partyka, US 6,728,293 - Partyka, and US 6,731,223 - Partyka.

Respectfully,

By 
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